

WHAT IS CLAIMED IS:

1 1. In a computer network including a server computer having a
2 first storage device for storing a first plurality of web pages, a second storage device
3 for storing a second plurality of web pages linked to the first plurality of web pages,
4 the server computer in communication with a third storage device for storing a third
5 plurality of web pages linked to the first plurality of web pages, a method for
6 efficiently storing web pages for quick downloading at a remote device, the method
7 comprising:

8 receiving a first signal from the remote device at the server computer
9 indicating selection of one of the first plurality of web pages;

10 transferring all of the second plurality of web pages that are linked
11 to the selected one of the first plurality of web pages from the second storage device
12 to the first storage device in response to the first signal;

13 transmitting a second signal from the second storage device to the
14 third storage device in response to the first signal; and

15 transferring all of the third plurality of web pages that are linked to
16 the selected one of the first plurality of web pages from the third storage device to
17 the second storage device in response to the second signal so that anticipated web
18 pages linked to any web pages selected by the remote device are quickly accessible
19 by the remote device.

1 2. The method of claim 1 wherein transferring all of the second
2 plurality of web pages includes deleting each of the non-selected first plurality of
3 web pages in the first storage device and wherein transferring all of the third
4 plurality of web pages includes deleting each of the non-selected second plurality of
5 web pages in the second storage device.

1 3. The method of claim 1 wherein storing the second plurality
2 of web pages linked to the first plurality of web pages includes:

3 determining one of an average size and a minimum size of each web
4 page linked to each of the first plurality of web pages; and

5 determining a reaction time of a client operating the remote device.

1 4. The method of claim 3 further comprising:
2 determining an average propagation delay between the client and the
3 web server;
4 determining an average link bandwidth between the client and the
5 server; and
6 determining a time to access a partition in the storage device.

1 5. The method of claim 1 wherein storing the third plurality of
2 web pages includes storing the third plurality of web pages at a horizontal partition
3 boundary.

1 6. The method of claim 1 wherein storing the third plurality of
2 web pages includes storing the third plurality of web pages at a vertical partition
3 boundary.

1 7. A system for providing quick downloading of web pages at a
2 remote device, the system comprising:
3 a server computer;
4 a first storage device in communication with the server computer for
5 storing a first plurality of web pages and for receiving a first signal from the remote
6 device indicating selection of one of the first plurality of web pages;
7 a second storage device in communication with the first storage
8 device, the second storage device for storing a second plurality of web pages linked
9 to the first plurality of web pages and for transferring all of the second plurality of
10 web pages that are linked to the selected one of the first plurality of web pages to
11 the first storage device in response to the first signal, the second storage device
12 further for transmitting a second signal in response to the first signal; and
13 a third storage device in communication with the first storage device,
14 the third storage device for storing a third plurality of web pages linked to the first
15 plurality of web pages and for transferring all of the third plurality of web pages that
16 are linked to the selected one of the first plurality of web pages to the second storage
17 device in response to the second signal so that anticipated web pages linked to any

18 web pages selected by the remote device are quickly accessible by the remote
19 device.

1 8. The system of claim 7 wherein the first storage device is
2 further operative to delete each of the non-selected first plurality of web pages in
3 response to the first signal, and wherein the second storage device is further
4 operative to delete each of the non-selected second plurality of web pages in
5 response to the second signal.

1 9. The system of claim 7 wherein the second storage device, in
2 storing the second plurality of web pages linked to the first plurality of web pages,
3 stores the second plurality of web pages based on one of an average size and a
4 minimum size of each web page linked to each of the first plurality of web pages and
5 a reaction time of a client operating the remote device.

1 10. The system of claim 9 wherein the second storage device is
2 further operative to store the second plurality of web pages based on an average
3 propagation delay between the client and the server, an average link bandwidth be-
4 tween the client and the server, and an access time to access a partition in the
5 storage device.

1 11. The system of claim 7 wherein the third storage device, in
2 storing the third plurality of web pages, is operative to store the third plurality
3 utilizing a horizontal partition boundary.

1 12. The system of claim 7 wherein the third storage device, in
2 storing the third plurality of web pages, is operative to store the third plurality
3 utilizing a vertical partition boundary.

1 13. In a computer network including a server computer having a
2 first storage device for storing a first plurality of web pages and a second storage
3 device for storing a second plurality of web pages linked to the first plurality of web

4 pages, a method for efficiently storing web pages for quick downloading at a remote
5 device, the method comprising:

6 receiving a first signal from the remote device at the server computer
7 indicating selection of one of the first plurality of web pages; and

8 transferring all of the second plurality of web pages that are linked
9 to the selected one of the first plurality of web pages from the second storage device
10 to the first storage device in response to the first signal so that anticipated web pages
11 linked to any web pages selected by the remote device are quickly accessible by the
12 remote device.

1 14. The method of claim 13 wherein the first storage device
2 comprises a fast memory and the second storage device comprises a disk memory.

1 15. The method of claim 13 wherein transferring all of the second
2 plurality of web pages includes deleting each of the non-selected first plurality of
3 web pages in the first storage device.

1 16. The method of claim 13 wherein storing the second plurality
2 of web pages linked to the first plurality of web pages includes:
3 determining one of an average size and a minimum size of each web
4 page linked to each of the first plurality of web pages; and
5 determining a reaction time of a client operating the remote device.

1 17. The method of claim 16 further comprising:
2 determining an average propagation delay between the client and the
3 server;
4 determining an average link bandwidth between the client and the
5 web server; and
6 determining a time to access a partition in the storage device.

1 18. A system for providing quick downloading of web pages at a
2 remote device, the system comprising:
3 a server computer;

4 a first storage device in communication with the server computer for
5 storing a first plurality of web pages and for receiving a first signal from the remote
6 device indicating selection of one of the first plurality of web pages; and

7 a second storage device in communication with the first storage
8 device, the second storage device for storing a second plurality of web pages linked
9 to the first plurality of web pages and for transferring all of the second plurality of
10 web pages that are linked to the selected one of the first plurality of web pages to
11 the first storage device in response to the first signal so that anticipated web pages
12 linked to any web pages selected by the remote device are quickly accessible by the
13 remote device.

1 19. The system of claim 18 wherein the first storage device
2 comprises a fast memory and the second storage device comprises a disk memory.

1 20. The system of claim 18 wherein the first storage device is
2 further operative to delete each of the non-selected first plurality of web pages in
3 response to the first signal.

1 21. The system of claim 18 wherein the second storage device, in
2 storing the second plurality of web pages linked to the first plurality of web pages,
3 stores the second plurality of web pages based on one of an average size and a
4 minimum size of each web page linked to each of the first plurality of web pages and
5 a reaction time of a client operating the remote device.

1 22. The system of claim 21 wherein the second storage device is
2 further operative to store the second plurality of web pages based on an average
3 propagation delay between the client and the server, an average link bandwidth be-
4 tween the client and the server, and an access time to access a partition in the
5 storage device.

1 23. The system of claim 18 wherein the first storage device is a
2 cache.

1 24. The system of claim 18 wherein the first storage device is a
2 random access memory.

1 25. The system of claim 18 wherein the second storage device is
2 an internal memory.

1 26. The system of claim 18 wherein the second storage device is
2 an external memory.

1 27. The system of claim 18 wherein the second storage device is
2 a hard drive.

1 28. The system of claim 18 wherein the second storage device is
2 a redundant array of inexpensive disks.

1 29. In a computer network including a server computer having a
2 first storage device for storing a first plurality of web pages and a second storage
3 device for storing a second plurality of web pages linked to the first plurality of web
4 pages, the first and second storage devices arranged in a hierarchy wherein the
5 second storage device has a lower access speed and a larger capacity than the first
6 storage device, a method for efficiently storing web pages for quick downloading
7 at a remote device, the method comprising:

8 receiving a first signal from the remote device at the server computer
9 indicating selection of one of the first plurality of web pages; and

10 transferring all of the second plurality of web pages that are linked
11 to the selected one of the first plurality of web pages from the second storage device
12 to the first storage device in response to the first signal so that anticipated web pages
13 linked to any web pages selected by the remote device are quickly accessible by the
14 remote device.

1 30. The method of claim 29 wherein the first storage device
2 comprises a fast memory and the second storage device comprises a disk memory.

1 31. The method of claim 29 wherein transferring all of the second
2 plurality of web pages includes deleting each of the non-selected first plurality of
3 web pages in the first storage device.

1 32. The method of claim 29 wherein storing the second plurality
2 of web pages linked to the first plurality of web pages includes:
3 determining one of an average size and a minimum size of each web
4 page linked to each of the first plurality of web pages; and
5 determining a reaction time of a client operating the remote device.

1 33. The method of claim 32 further comprising:
2 determining an average propagation delay between the client and the
3 server;
4 determining an average link bandwidth between the client and the
5 web server; and
6 determining a time to access a partition in the storage device.

1 34. A system for providing quick downloading of web pages at a
2 remote device, the system comprising:
3 a server computer;
4 a first storage device in communication with the server computer for
5 storing a first plurality of web pages and for receiving a first signal from the remote
6 device indicating selection of one of the first plurality of web pages; and
7 a second storage device in communication with the first storage
8 device, the second storage device having a lower access speed and a larger capacity
9 than the first storage device, the second storage device for storing a second plurality
10 of web pages linked to the first plurality of web pages and for transferring all of the
11 second plurality of web pages that are linked to the selected one of the first plurality
12 of web pages to the first storage device in response to the first signal so that
13 anticipated web pages linked to any web pages selected by the remote device are
14 quickly accessible by the remote device.

1 35. The system of claim 34 wherein the first storage device
2 comprises a fast memory and the second storage device comprises a disk memory.

1 36. The system of claim 34 wherein the first storage device is
2 further operative to delete each of the non-selected first plurality of web pages in
3 response to the first signal.

1 37. The system of claim 34 wherein the second storage device, in
2 storing the second plurality of web pages linked to the first plurality of web pages,
3 stores the second plurality of web pages based on one of an average size and a
4 minimum size of each web page linked to each of the first plurality of web pages and
5 a reaction time of a client operating the remote device.

1 38. The system of claim 37 wherein the second storage device is
2 further operative to store the second plurality of web pages based on an average
3 propagation delay between the client and the server, an average link bandwidth be-
4 tween the client and the server, and an access time to access a partition in the
5 storage device.

1 39. The system of claim 34 wherein the first storage device is a
2 cache.

1 40. The system of claim 34 wherein the first storage device is a
2 random access memory.

1 41. The system of claim 34 wherein the second storage device is
2 an internal memory.

1 42. The system of claim 34 wherein the second storage device is
2 an external memory.

1 43. The system of claim 34 wherein the second storage device is
2 a hard drive.

- 1 44. The system of claim 34 wherein the second storage device is
- 2 a redundant array of inexpensive disks.

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